Table A-25

Name	Water Studies Recirculation Building
Number	1706-KER
Location	Located adjacent to the west wall of the 105-KE Reactor.
Operational Years	1955-1971 (K Basin Closure Support)
Building Description	A single-story concrete and steel frame structure with approximately 1,075 m^2 (11,571 ft^2) of space. It has corrugated transite siding, concrete floors, and flat roof with built-up asphalt and gravel surfacing over cement board and 6.4 mm (¼ in.) steel plate.
Status/History	The 1706-KER building contains four shielded cells below-grade, each housing the water treatment, heat exchange, pumping, and remote instrument equipment for each of the four in-reactor loops. These loops are capable of operation to 285° C. (545 ° F) at 1600 psig. Loop materials are Zircaloy-2 and carbon steel or Zircaloy-2 and stainless steel with in-reactor portions to 6.8 cm (2.7 in.) ID. Appurtenances: The 1706-KEL laboratory, a 251 m^2 (2702 ft^2) building adjoins the 1706-KER building.
Characterization	Radiological and chemical contamination; unquantified hazardous construction materials

Table A-26

Name	Shop Building
Number	1713-KE
Location	Located at the northwest corner of the 105-KE.
Operational Years	1955-present
Building Description	A sheet metal "butler" building with concrete floor and footings. 74 m^2 (797 ft^2)
Status/History	Used primarily for storage.
Characterization	Unquantified hazardous construction material, radiological contamination

Table A-27

Name	Warehouse
Number	1713-KER
Location	West of the 105-KE.
Operational Years	1955-present
Building Description	Identical to 1713-KE, a sheet metal "butler" building with concrete floor and footings. 74 m^2 (797 ft^2)
Status/History	Primarily used for storage.
Characterization	Unquantified hazardous construction material, radiological contamination

Table A-28

Name	Warehouse
Number	1713-KW
Location	Northeast of the 105-KW
Operational Years	1955-present
Building Description	Identical to 1713-KE Building. A sheet metal "butler" building with concrete floor and footings. 74 m^2 (797 ft^2)
Status/History	Primarily used for storage.
Characterization	Unquantified hazardous construction material, radiological contamination

Table A-29

Name	Oil and Paint Storage Shed
Number	1714-KE
Location	Northeast of the 105-KE.
Operational Years	1955-present
Building Description	An 18 m^2 (194 ft^2) sheet metal "butler" building on a concrete foundation. The building has been used for storage and as a work area.
Status/History	
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-30

Name	Warehouse
Number	1714-KW
Location	Northeast of the 105-KW.
Operational Years	1955-present
Building Description	An 18 m^2 (194 ft^2) sheet metal "butler" building on a concrete foundation. The building has been used for electrical equipment storage.
Status/History	
Characterization	Unquantified hazardous construction material, radiological contamination

Table A-31

Name	Fan House
Number	1717A-KE
Location	Adjacent to 1717-KE Maintenance shop
Operational Years	1955-present
Building Description	Ventilation shed and is the structure that houses the fan for the 1717-KE building. The fan house will be demolished in conjunction with 1717-KE.
Status/History	
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-32

Name	Maintenance/Transportation Shop
Number	1717-K
Location	Midway between 100-KE and 100-KW areas.
Operational Years	1955-present
Building Description	A single-story concrete and steel frame structure with corrugated transite siding, concrete foundation and floor, flat prefabricated cement board roof with built-up asphalt and gravel surfacing. The building housed carpenter, millwright, welding, painting shops for routine area maintenance as well as typical service station facilities and equipment for light automotive maintenance. Dimensions: 999 m^2 (10,753 ft^2) total area.
Status/History	Purpose was to house maintenance shops and light equipment maintenance facilities.
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-33

Name	Maintenance Shop
Number	1724-K
Location	South of 1717-K.
Operational Years	1955-present
Building Description	A single-story concrete and steel frame structure with corrugated steel siding, a concrete foundation and floor, and a sloped pre-fabricated metal roof. It has approximately 47 m^2 (506 ft^2) of space.
Status/History	This structure housed the repair and fabrication facilities for everyday repairs (non-project size) needed in the 100-K area.
Characterization	Unquantified hazardous construction material, chemical contamination

Table A-34

Name	Equipment Shed
Number	1724-KA
Location	East of 1724-K.
Operational Years	1955-present
Building Description	A single-story concrete and steel frame structure with corrugated transite siding, a concrete foundation and floor, and a sloped pre-fabricated steel roof. It has approximately 19 m^2 (205 ft^2) of space.
Status/History	
Characterization	Unquantified hazardous construction material, chemical contamination

Table A-35

Name	Gas Bottle Storage Building
Number	1724-KB
Location	West of 166A-KE
Operational Years	1955-present
Building Description	A single-story open-sided, concrete and steel frame structure with steel siding in places, a concrete foundation and floor, and a sloped pre-fabricated steel roof. It has approximately 19 m^2 (205 ft^2) of space.
Status/History	
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-36

Name	River Pump House
Number	181-KE
Location	On the shore of the Columbia River, northwest of 105-KE.
Operational Years	1955-present
Building Description	An open air, reinforced concrete pad 415 m^2 (4,467 ft^2) at ground level with subsurface pump wells. Electrically driven deep well pumps are mounted on the pad and are controlled remotely from the 165-KE Building control room.
Status/History	Purpose was to provide facilities for transfer of water from Columbia River to the filter plant. Appurtenances: small guard station mounted on top of 181-KE Building, 1605-KE Building.
Characterization	Unquantified hazardous construction material, asbestos

Table A-37

Name	River Pump House
Number	181-KW
Location	On the shore of the Columbia River, northwest of 105-KW.
Operational Years	1955-1971
Building Description	Identical to 181-KE Building. An open air, reinforced concrete pad 415 m^2 (4,467 ft^2) at ground level with subsurface pump wells. Electrically driven deep well pumps are mounted on the pad and are controlled remotely from the 165-KE Building control room.
Status/History	Purpose was to provide facilities for transfer of water from Columbia River to the filter plant. Appurtenances: small guard station mounted on top of 181-KE Building, 1605-KE Building.
Characterization	Unquantified hazardous construction material, asbestos

Table A-38

Name	Headhouse
Number	183.1-KE
Location	Next to the sedimentation basins at the southern end of the facility.
Operational Years	1955-present
Building Description	The headhouse is the water quality center for the water treatment plant and contained equipment for metering raw water; chemical injection into raw, filtered, and process water; and for effluent and influent control for the filter plant (AEC 1956). The headhouse has a concrete foundation and floor. It also contains structural-steel frame walls with transite siding, and a transite roof with built-up asphalt and gravel (WHC 1988, UNI 1984). The building was constructed of 2,404 m^3 (3,143 yd^3) of concrete; 40,274 kg (88,789 lb) of miscellaneous iron; 44,635 kg (98,404 lb) of structural steel; 141,385 kg (311,701 lb) of reinforcing steel; 25.2 metric tons (27.8 tons) of miscellaneous steel; 517 m^2 (5,565 ft^2) of siding (AEC 1956).
Status/History	Raw water from the 181-K Pump house entered the basement of the headhouse through two 152-cm (60-in.)-diameter pipelines. At the headhouse, the two lines branched into three 91-cm (36-in.)-diameter distribution lines (GE 1952). A single-story, T-shaped structure. The main wing contained the control equipment and personnel facilities; electrical equipment room, main control room, laboratory, lunchroom, locker and restroom, and chlorine equipment room. The remaining portion of the building housed the sanitary water filters, filter control board, water softeners, caustic soda and alum feeding pumps, activated silica batching and storage tanks, and silica batch control board. The basement of the main wing contained the raw water manifolds, metering stations, and the alum and activated silica injection points. The stem section of the basement contained the chemical heat exchangers, water glycol heat exchangers, circulating pumps, silica batching and storage tanks, and air compressors. The headhouse controlled the operations of the chlorination of raw water, addition of coagulants to raw water, pH correction of filtered water, addition of corrosion inhibitor to process water, and influent and effluent control (AEC 1956, WHC 1988). Appurtenances: 183.2-KE, 183.3-KE, 183.4-KE, 183.5- and 183.6-KE.
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-39

Name	Basins/Sedimentation
Number	183.2-KE
Location	South of the 105-KE Reactor; north of 183.1-KE, north of 183-KE.
Operational Years	1955 to present
Building Description	There are six parallel sedimentation basins. Water was fed from the flocculation basins into the sedimentation basins (GE 1952). The basins were constructed with 19,690 m^3 (25,753 yd^3) of concrete; 18,264 kg (40,266 lb) of miscellaneous iron; 1,328,610 kg (2,929,083 lb) of reinforcing steel; and 4,808.6 m (15,766 f) of pipe. The water-holding capacity of the sedimentation basins were 106,748,618 L (28,200,000 gal) (AEC 1956). The total area is 26,756 m^2 (288,000 ft^2) (UNI 1984). Flocculation and subsidence basins consisting of open air-reinforced concrete basins, mixing chambers, agitators, flumes, etc. Total area of this facility is about 26,756m^2 (288,000 ft^2).
Status/History	The 183.2-KE Flocculation and Sedimentation Basins were designed to provide through-mixing of chemicals that were added to the water in the 183.1-KE Headhouse, coagulation of particles of suspended matter, and settlement of suspended solids. The facility is capable of handling a maximum total water flow of 592,800 L/min (156,600 gal/min). From the headhouse, water entered the flocculation basins and directly into the sedimentation basins. Detention time for the flocculators was 29 minutes to allow for adequate coagulation. The sedimentation basins contained six individual sections, three on each side of a central tunnel, interconnected through two distribution flumes. In addition, each basin discharge flume is equipped with twenty 60cm (24in.) disc valves. Water flowed over a weir through the disc valves and into the filter distribution flume located under the discharge flume. At normal water flow, 24 cm (9.4 in.) of water flowed over the weir (GE 1952). Water entered the 183.3-KE Filter Plant from the sedimentation basins.
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-40

Name	Basin/Filters
Number	183.3-KE
Location	North of the 183.2 Sedimentation Basins
Operational Years	1955 to present
Building Description	The filter basin is about 246 m (807 ft) wide, 24.6 m (81 ft) long, and 8.5 m (28 ft) high. The basin was constructed of 8,947 m^3 (11,702 yd^3) of concrete; 820,231 kg (1,808,300 lb) of reinforcing steel; 6,870 m (22,539 ft) of copper tubing; and 18,370 kg (40,498 lb) of miscellaneous steel (AEC 1956).
Status/History	The 183.3-KE Filter Basin was designed to remove unsettled flocculant and other small suspended particles carried by the water from the sedimentation basins. The filter building contained three sections: flumes, filters, and pipe gallery. The flumes are a vertical bank of concrete conduits located adjacent to, and paralleling, the entire width of the sedimentation basins. The filters are immediately beyond the flumes and contained two beds and a central gullet separating the beds. Water flowed from the flumes through a 152 cm and 182 cm (60 in. and 72in.) filter sluice gate into each filter gullet. A pipe gallery ran the entire length of the filter, which included the central tunnel. Filtered water flowed from the filters, through the filter effluent flumes toward the outer ends of the flumes, and delivered to the clearwells (183.4-KE).
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-41

Name	Reservoir and Clearwells
Number	183.4-KE
Location	North of 183.3-KE, southeast of 166-KE.
Operational Years	1955 to present
Building Description	The clearwell perimeter walls, floors, columns, beams, and struts were constructed of reinforced concrete. The roof deck was constructed of a pre-cast, reinforced-concrete slab covered with a 4-ply asphalt and gravel. The overall dimensions, which included the central pipe tunnel, are 246 m (807 ft) long, by 47 m (154 ft) wide, and 7 m (23 ft) deep. Each clearwell is 119 m (390 ft) long, 47 m (154 ft) wide, and 7 m (23 ft) deep. It was constructed of 19,990 m^2 (215,170 ft^2) of concrete; 664 metric tons (732 tons) of reinforcing steel; 19 metric tons (21 tons) of miscellaneous steel; 1,182.5 squares of roofing; 519 m (1,703 ft) of copper tubing; and 1,974 m (6,476 ft) of pipe (AEC 1956).
Status/History	The 183.4-KE Clearwells were designed to provide underground storage of filtered water. The two clearwells are each capable of holding 34,068,708 L (9,000,000 gal) of water (UNI 1984). A pipe tunnel divides the two reservoirs on the centerline. A gravity pipe connection is located between the bottoms of the two halves of the reservoir. The pipe is located under the tunnel, with an overflow line from each reservoir connected to the main sewer.
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-42

Name	Lime Feeder Building
Number	183.5-KE
Location	Southwest corner of the 183.4-KE Clearwells
Operational Years	1955 to present
Building Description	The lime feeder building is located above the flash mixers. Differences exist in the size of the building. One document says that it is 21 m^2 (225 ft^2) (GE 1964), and another document states it is 86 m^2 (925 ft^2) (UNI 1984). Construction drawing H-1-25108 indicates the building was 11 x 8.1 x 5.1 m (36 x 27 x 17 ft).
Status/History	The lime feeder building was designed to discharge lime through a pair of flash mixers to the clearwells. Lime was added to the water to obtain the proper pH. The lime building contained an automatic, dry, gravimetric belt-type feeder with a capacity of 227 kg/hr (500 lb/hr); hopper, weir box, and lime feeder. Lime was stored in a steel silo with a storage capacity of 113 metric tons (125 tons) (AEC 1956). Lime was delivered to the silos by railcars.
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-43

Name	Lime Feeder Building
Number	183.6-KE
Location	Southeast corner of the 183.4-KE Clearwells
Operational Years	1955 to present
Building Description	The lime feeder building is located above the flash mixers. Differences exist in the size of the building. One document says that it is 21 m^2 (225 ft^2) (GE 1964), and another document states it is 86 m^2 (925 ft^2) (UNI 1984).
Status/History	The lime feeder building was designed to discharge lime through a pair of flash mixers to the clearwells. Lime was added to the water to obtain the proper pH. The lime building contained an automatic, dry, gravimetric belt-type feeder with a capacity of 227 kg/hr (500 lb/hr); hopper, weir box, and lime feeder. Lime was stored in a steel silo with a storage capacity of 113 metric tons (125 tons) (AEC 1956). Lime was delivered to the silos by railcars.
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-44

Name	Pipe Tunnel
Number	183-K (also known as 183.7-KE)
Location	Under the 183-KE Water Treatment Facility
Operational Years	1955 to present
Building Description	The pipe tunnel extended from the 183.1-KE Headhouse, under the center of the sedimentation basin, the clearwell fuel storage area, the 190-KE Building, and the 165-KE Building to the 105-KE (AEC 1956, drawing SK-1-23727). The tunnel contains two 152-cm (60-in.) raw water lines, a 76-cm (30in.) sewer line, and an elevated walkway.
Status/History	The 183-K Pipe Tunnels are below-grade tunnels housing the pipelines that carried effluent water from the 183-KE and 183-KW Filter Plants to the 190-KE and 190-KW Process Water Pump House Buildings. The tunnels contain metal walkways and the piping associated with the water delivery system between the filter plants and the pump houses. This tunnel is also known as the 183.7-KE Pipe Tunnel
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-45

Name	Chlorine Vault
Number	183-KE
Location	Next to the 183.1-KE Headhouse
Operational Years	1955-present
Building Description	The 183-KE Chlorine Car Protection Building contained two bays, with a railroad spur at each bay (WHC 1988). The entry doors are metal and bomb resistant.
Status/History	The completion report states that chlorine was stored and used directly from railroad tank cars, and air pressure was used for unloading. Chlorine was fed from the railcars to evaporators that vaporized it to a gaseous state. From the evaporators, the chlorine passed to a visible vacuum-type chlorinator that controlled the injection rate in proportion to raw water flow. The injection of chlorine is blended with raw water to form a chlorine solution. Three evaporators and three chlorinators were used, two for active use and one for standby (AEC 1956).
Characterization	Unquantified hazardous construction material; chemical contamination

Table A-46

Name	Potable Water Treatment Plant
Number	185-K
Location	Adjacent to 183.1-KE.
Operational Years	1991 - present
Building Description	Self-contained packaged water treatment subsystem capable of providing up to 380 L/min. (100 gal/min.) of potable water. Most of this facility is located within a pre-engineered metal building.
Status/History	The system is designed for a continuous supply of 190 L/min. (50 gal/min.) from each of two package water treatment units. The package units use upflow clarifiers and polishing filters to remove particulate from the water. A packaged duplex pump station delivers raw water from sedimentation basin No. 4 to the treatment plant via a 10-cm (4-in) PVC pipe in the tunnel and the 183.1 KE basement. A coagulant is injected at the influent of the upflow clarifiers. A filter aid (polymer) can be injected to combine the smaller particles into filterable solids. Chemical addition is controlled by the plant's PLC, which monitors influent and effluent turbidity and adjusts the chemical injection rate accordingly.
Characterization	Chemical contamination

Table A-47

Name	Effluent Water Monitoring Station
Number	1908-KE
Location	Northwest of 105-KE
Operational Years	1955-1971
Building Description	A 13 m^2 (140ft^2) building of corrugated transite.
Status/History	This was used as an iodine monitoring facility. It contains instruments and sampling systems for recording flow, temperature, and collecting samples at the 004 river outfall.
Characterization	Radiological contamination; unquantified hazardous construction materials

Table A-48

Name	Main Pump House
Number	190-KE
Location	Over the central tunnel between the 165-KE Control Building and 183.4-KE Clearwells.
Operational Years	1955 to 1971
Building Description	The building housed all large water pumping units. The superstructure was constructed of a steel frame and transite siding. The substructure was constructed of reinforced concrete. The following materials were used for the construction of the building: 4,869 m^3 (6,368 yd^3) of concrete; 42 metric tons (46 tons) of miscellaneous steel; 378 metric tons (416 tons) of reinforcing steel; 267 metric tons (294 tons) of structural steel; 1,508 m^2 (16,232 ft^2) of roofing; 3,749 m (12,300 ft) of siding; 3,749 m (12,300 ft) of pipe; and 1,532 m (5,026 ft) of copper tubing (AEC-GE 1964, AEC 1956, WHC 1994). The building is 4,425 m^2 (47,630 ft^2) (UNI 1984).
Status/History	The 190-KE Process Water Pump house is a single-story building with a basement that was designed to house all large water pumping units, which included service and backwash pumps. The pump house developed the pressure necessary to pump treated water to the reactor for cooling (GE 1952). The building contained six dual-pumping sets of process pumps designed to provide a positive suction head to the secondary pump and also furnish water during transient shutdown. In addition, it contained primary and secondary pumps (GE 1952).
Characterization	Unquantified hazardous construction materials; chemical contamination

Table A-49

Name	Air Sparging Vent 105-KW Basin
Number	296K105
Location	Adjacent to 105-KW
Operational Years	1992 - present
Building Description	A 5cm (2in) pipe used to vent air when sparging the basin sand filters. The pipe will be demolished in conjunction with the 105-KW building.
Status/History	
Characterization	Radiological contamination

Table A-50

Name	CVDF Main Stack
Number	296K142
Location	West of 190-KW
Operational Years	2001 to present
Building Description	Approximately 61 cm (24-in.) diameter, 12 m (39-ft) tall steel stack that exhausts filtered ventilation and process air from the CVDF.
Status/History	
Characterization	Radiological contamination

Table A-51

Name	Cargo Containers
Number	CC1K0035, CC1K0036, CC1K0037, CC1K0176, CC1K0177, CC1K0178, CC1K0179, CC1K0180, CC1K0181, CC1K0182, CC1K0236
Location	Various
Operational Years	Varies (K Basin Closure Support)
Building Description	Connex boxes in and around the original reactor building and fuel storage basin facilities used for storage during basin remediation work. These are generally 2.4 to 3.1 m (7.9 to 10ft) wide and up to 12m (39ft) long.
Status/History	
Characterization	Radiological contamination; unquantified hazardous construction materials

Table A-52

Name	Storage Containers
Number	HS0028, HS0080, HS0081
Location	
Operational Years	1998 - present
Building Description	Hazardous waste storage units are purpose built, pre-fabricated units that have been installed to support basin remediation work.
Status/History	
Characterization	Chemical contamination

Table A-53

Name	CERCLA Storage Unit
Number	KA-CW-01
Location	
Operational Years	1998 - present
Building Description	393 m^2 (4,230 ft^2) storage pad
Status/History	This is a hazardous waste storage pad that was installed to support basin remediation work.
Characterization	Chemical contamination

Table A-54

Name	Mobile Offices
Number	MO-048, MO-054, MO-060, MO-101, MO-102, MO-236, MO-237, MO-293, MO-323, MO-382, MO-401, MO-402, MO-442, MO-495, MO-500, MO-506, MO-507, MO-907, MO-917, MO-928, MO-955, MO-969
Location	Various
Operational Years	varies (K Basin Closure Support)
Building Description	Mobile office units are generally from 12 m to 18 m (39 ft to 59 ft) long. These are generally 3.6 m to 4.3 m (12 ft to 14 ft) wide units that may be linked to form 2 wide up to 16 wide complexes.
Status/History	These mobile offices are placed around the original reactor building and fuel storage basin facilities and are used for engineering, administration, management, lab, and craft support during remediation work. Some units were purchased new and have been at K Area for 10 to 15 years. Other units have a long Hanford Site history and have been brought to the K Area within the last ten to fifteen years.
Characterization	Potential radiological contamination; unquantified hazardous construction materials.

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APPENDIX B

SUPPORTING INFORMATION FOR COST ESTIMATE

APPENDIX B
SUPPORTING INFORMATION FOR COST ESTIMATE

B.1 PURPOSE

The purpose of this appendix is as follows:

- Document the source of raw data for the deactivation, decontamination, decommissioning, and demolition (D4)/interim safe storage (ISS) and surveillance and maintenance (S&M) costs
- Provide background information for the S&M costs
- Provide background information for the D4 and ISS costs
- Explain the basis for the duration of S&M for reactors and buildings.

B.2 SOURCE OF S&M COST ESTIMATE DATA

There are two sources of S&M costs for the 100-K Areas. The actual, historic costs for fiscal year 2004 (FY04) and FY05 and forecast costs for FY06 were received from Washington Closure Hanford (WCH) Project Controls and adjusted to show what percentage of the cost account work related to the 100-K Area buildings and reactor buildings already in ISS. These costs were then averaged over the 3 years to provide a basis (actual) for S&M at 100-K.

The second source of information is the S&M value published in DOE/RL-2004-43 (DOE-RL 2004) that covered many similar buildings in the 100-K Area. In Section 4.3.1 of DOE/RL-2004-43, a value of $300,000 per year is used for the 27 buildings.

Additionally, the reroofing costs came from the backup information for reroofing the B Reactor found in DOE/RL-2001-09, *Engineering Evaluation/Cost Analysis for the 105-B Reactor Facility,* Appendix B and Table B-2 (DOE-RL 2001). This document placed the 2001 cost for replacing the B Reactor roof at $540,000. When mobilization and waste disposal costs were added the cost grew to $580,000 per a roofing assessment provided by WCH. This equates to $13 per ft^2 ($580,000/44,597 ft^2) in 2001 dollars.

B.3 SOURCE OF D4/ISS COST ESTIMATE DATA

The WCH estimators provided a report of the D4 and ISS cost estimates by building number for each reactor building and all the ancillary facilities included engineering/planning/project management costs that had been consolidated in various organizations by the *River Corridor*

Closure Contract Integrated Project Baseline (WCH 2005). Waste disposal estimates were also provided in tons of debris per building.

Note that some mobile office units were not included in the WCH cost estimates, but were estimated at \$16.77 per ft^2, which is the rate used for other mobile offices. This rate was also applied to miscellaneous waste storage slabs and areas included in the scope. Similarly, the 151-K, 151-KE, and 151-KW Switchyards were not included in the WCH costs estimates. Values for these areas were scaled from the 352E Switchyard D4 estimate.

The cost estimate for D4 of the 105-KE and 105-KW Buildings does not include costs required for preparation for transport and disposal of the 105-KE and 105-KW Reactor blocks for their final disposition prior to 2068.

B.4 COST ESTIMATES SPECIFICALLY DEVELOPED FOR EE/CA

None.

B.5 ANALYSIS AND ADJUSTMENTS OF S&M COST ESTIMATES

The cost range for the two sources of S&M data is approximately 31.7 cents per ft^2 per year (historic basis) to 21.4 cents per ft^2 per year (previous EE/CA). If those rates are applied to the scope of this EE/CA (approximately 1.7M ft^2), the total estimated S&M costs could vary by about \$173K by using this information exclusively. While this appears a large variation, the lower value from the previous EE/CA (DOE-RL 2004) did not include the reactors which require more effort than the types of buildings that formed the basis for this lower value.

B.5.1 Recommendation and Justification for S&M Costs

Using the previously published S&M costs (equating to about 21 cents per ft^2) and historic costs for S&M activities in the 100-K Area (equating to about 31 cents per ft^2) as two data points, a review was conducted of the sizes and the relative complexities/contamination levels of the facilities involved in this EE/CA. As a result of this review, 41 cents per ft^2 per year was recommended for use in this EE/CA. This value represents the base case for this analysis because of the higher risk buildings being added with this EE/CA such as 1706-KE, 1706-KER, 1706-KEL, and 142-K (which is currently a Category 2 Nuclear Facility, although is expected to be < Nuclear Category 3 after facility shutdown).

The given reroofing costs at \$13/ft^2 are in 2001 dollars. The EPA guidance (EPA 2000a) was used to escalate those cost to establish the 2006 estimated costs as shown below.

$$\$13 \times (1.037)^5 = \$15.59/ft^2 \text{ in 2006 dollars}$$